IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

IN RE: INTERCONTINENTAL	§	Lead Case No. 4:19-cv-01460
TERMINALS COMPANY LLC	§	
DEER PARK FIRE LITIGATION	§	

**DEFENDANTS INTERCONTINENTAL TERMINALS COMPANY LLC AND
NSK CORPORATION'S RESPONSE IN OPPOSITION TO PLAINTIFFS'
MOTION TO EXCLUDE DEFENDANTS'
AIR MODELING EXPERT DR. PAOLO ZANNETTI**

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

Defendants Intercontinental Terminals Company LLC ("ITC") and NSK Corporation submit this response in opposition to the *Bryant* Plaintiffs' Motion to Exclude Opinions and Testimony of Defendant's Expert Dr. Paolo Zannetti, DE 1305, and their memorandum in support, DE 1305-1. Dr. Paolo Zannetti's opinions meet the reliability and relevance requirements set forth in Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and are admissible. Plaintiffs' motion should therefore be denied.

I.   INTRODUCTION

Plaintiffs seek certification of a class encompassing nearly 200,000 individuals and thousands of businesses across nearly 84 square miles. *See* Second Amended Class Action Complaint (DE 534), ¶ 14 (adopting Mr. Auberle's isopleth as the proposed class area); *see also* Seward G. Gilbert, Jr., *Estimates of Likely Affected Population, Population in Poverty Status and Businesses* 1 (Mar. 31, 2022) (DE 1309-3); (concluding that the proposed class area covers approximately 84 miles and includes an estimated 190,000 residents and 2,500 to 3,500 businesses). Plaintiffs rely entirely on Mr. William Auberle— their purported air modeling expert—to define the scope of the proposed class. *See* DE 534, ¶ 14 (adopting Mr. Auberle's isopleth as the class area). Defendants, in turn, identified Dr. Paolo Zannetti—an atmospheric scientist with more than 50 years of experience—as their air modeling expert to review and critique Mr. Auberle's model. Dr. Zannetti's report details, in painstaking fashion, the numerous flaws in Mr. Auberle's methodology that render his opinions wholly unreliable, including his complete failure to analyze, or even to consider, numerous data sets that are directly contrary to his opinions.

1

Recognizing that this is fatal to their proposed class, Plaintiffs have sought to exclude Dr. Zannetti, arguing that he failed to substantiate his opinions and ignored evidence that did not support his opinions.[1] *See* DE 1305-1 at 5. Plaintiffs' arguments, however, mischaracterize Dr. Zannetti's opinions and misconstrue his report and testimony. Dr. Zannetti considered and discussed multiple lines of evidence that support his conclusion that flaws in Mr. Auberle's modeling rendered his results unreliable and resulted in vast overestimation of particulate matter ("PM") at ground level. Plaintiffs cherry-pick a few of Dr. Zannetti's multiple lines of evidence and present them in isolation as the entire basis of his opinions. That mischaracterizes Dr. Zannetti's thorough, scientifically valid critique of Mr. Auberle's model. Furthermore, Plaintiffs ignore Dr. Zannetti's extensive, specialized knowledge and experience in air modeling and atmospheric science on which he relied to support his opinions. As discussed below, none of the issues raised in the Plaintiffs' motion provide a valid legal basis on which to exclude the opinions and testimony of Dr. Zannetti and their motion should be denied.

II.   BACKGROUND

Plaintiffs, four individuals and one business, brought a class action on behalf of themselves and others allegedly impacted by the March 2019 fire at the ITC Deer Park Facility (the "Facility").[2] Plaintiffs seek to certify a class based entirely on Mr. Auberle's

---

[1] Defendants filed motions to exclude Plaintiffs' air modeling expert William Auberle (DE 1309) and toxicology expert Dr. Thomas Dydek (DE 1310).

[2] Since the Plaintiffs filed their first complaint, the Named Plaintiffs have changed. *See* DE 01; DE 15.   The current complaint, Plaintiffs' Second Amended Class Action Complaint, names five individuals and one business. *See* DE 534. One individual, Mr. Jeffrey Aaron, was subsequently withdrawn as a proposed class representative.

model of "total suspended particulate" ("TSP") deposition. *See* William Auberle, *Atmospheric Dispersion and Deposition of Particulate Matter Emissions from Fires in March 2019 at Intercontinental Terminal Company Deer Park Terminal* 9, fig. 2 (Mar. 28, 2022) (DE 1309-1) (isopleth showing modeled TSP deposition); DE 534, ¶ 14 (adopting isopleth as the proposed class area). As part of his report, Mr. Auberle used AERMOD to purportedly model ambient concentrations of particulate matter with a diameter of less than 2.5 micrometers ("$PM_{2.5}$") and deposition of TSP. *See* DE 1309-1 at 7–9. Mr. Auberle created two isopleths that purport to show areas around the Facility with modeled $PM_{2.5}$ concentrations greater than 35 µg/m^3 and TSP deposition greater than 1 gram per square meter ("g/m^2"). *Id.* at 7, fig. 1; *id.* at 9, fig. 2. Plaintiffs identified the latter as their basis for the proposed class area, *see* DE 534, ¶ 14, with the isopleth becoming the basis for an enormous proposed class area covering tens of square miles and hundreds of thousands of individuals, businesses, government entities, and schools. *See* DE 1309-3 at 1.

Dr. Zannetti, in turn, opined on Mr. Auberle's model and results. *See generally* Paolo Zannetti, *Response to Report of William M. Auberle on Atmospheric Dispersion and Deposition of Particulate Matter Emissions from Fire of March 2019 in Deer Park, Texas* (July 1, 2022) (DE 1309-7). In formulating his opinions, Dr. Zannetti reviewed the considerable, publicly available air monitoring data that was collected during and for months after the fire by the U.S. Environmental Protection Agency ("EPA"), Texas Commission on Environmental Quality ("TCEQ"), and ITC through its air monitoring contractor Center for Toxicology & Environmental Health ("CTEH"). *See* DE 1309-7 at 12–27, 79–96; TCEQ, *Intercontinental Terminals Company Fire Response 2019: After*

Action Review Report 4–10 (Jan. 7, 2020) (DE 1309-6) (discussing air quality monitoring performed by ITC contractors, TCEQ, EPA, and Harris County staff). Dr. Zannetti also compared these data to Mr. Auberle's modeling results, DE 1309-7 at 79–96, assessed photographs and videos of the fire, *id.* at 61–67, and performed sensitivity analyses of Mr. Auberle's model inputs, *id.* at 97–103, resulting in a comprehensive 105-page report detailing how Mr. Auberle's arbitrary selection of model inputs and failure to consider available data resulted in an unreliable proposed class area. *See id.* at 104. In connection with their class certification motion, Plaintiffs have sought to exclude Dr. Zannetti's opinions. *See* DE 1305; DE 1305-1.

III.   LEGAL STANDARD

Federal Rule of Evidence 702(a) provides that an expert may testify if "the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue." Likewise, Rule 702 requires that an expert's testimony be relevant and reliable. *See Curtis v. M&S Petroleum, Inc.*, 174 F.3d 661, 668 (5th Cir. 1999) (citing *Daubert*, 509 U.S. at 592–93). Expert testimony is relevant if it assists the trier of fact in understanding the evidence or determining a fact in issue. *Daubert*, 509 U.S. at 591. Expert testimony is reliable if "the reasoning or methodology underlying the testimony is scientifically valid." *Id.* at 592–93. The same requirements apply to expert testimony whether offered at the class certification stage or trial. *See Prantil v. Arkema Inc.*, 986 F.3d 570, 575 (5th Cir. 2021) ("[T]he *Daubert* hurdle must be cleared when scientific evidence is relevant to the decision to certify.").

IV.   ARGUMENTS

A.   Dr. Zannetti's opinions are reliable and relevant.

1.   Dr. Zannetti offers opinions and testimony on Mr. Auberle's AERMOD model and results.

The purpose of Dr. Zannetti's report is to offer opinions on Mr. Auberle's model, created using AERMOD, and its results.   Specifically, Dr. Zannetti "examined the technical report prepared by Plaintiffs' expert Mr. Auberle[,] . . . analyzed his computer modeling files, replicated his smoke plume simulations, and prepared a review and critique of his work and results." DE 1309-7 at 4. Plaintiffs contend that Dr. Zannetti's opinions on Mr. Auberle's model are somehow unreliable because he did not run his own model. *See* DE 1305-1 at 7, 10. But Plaintiffs' argument overlooks the purpose of Dr. Zannetti's report and, as described below, the multiple lines of evidence that he considered in formulating his opinions. Dr. Zannetti's opinions do not require a separate model and are more than sufficiently supported by his consideration of copious monitoring data, photos, and sensitivity analyses. *See In re Pool Prods. Distribution Mkt. Antitrust Litig.*, No. MDL 2328, 2016 WL 2756437, at *8 (E.D. La. May 12, 2016) ("Nothing in Rule 702 precludes a respondent's expert from testing or critiquing the reliability of the movant's expert's work.").

2.   Dr. Zannetti is qualified to offer opinions on Mr. Auberle's use of AERMOD and his model.

Dr. Zannetti is an atmospheric scientist and air modeling expert with over 50 years of experience. *See* Zannetti Deposition at 70, 208 (Attached as Exhibit 1). Dr. Zannetti received a doctoral degree in physics and began working in the air pollution modeling field

in 1971. *See* Ex. 1 at 70; DE 1309-7 at Appendix A. In addition to Dr. Zannetti's extensive

consulting experience, he also published the first comprehensive book on air pollution

modeling. Ex. 1 at 265. Plaintiffs, however, contend that Dr. Zannetti is somehow

unqualified to opine on Mr. Auberle's use of AERMOD because he is not an engineer. *See*

DE 1305-1 at 5–6 (stating that Dr. Zannetti is "not an engineer"); *id.* at 9 (referring to Dr.

Zannetti's years of experience "in a non-engineering field"). Such claims are without

merit. Dr. Zannetti has extensive experience with air modeling and with AERMOD

specifically. *See* Ex. 1 at 79–80 (stating that he has studied AERMOD, regularly uses

AERMOD, and has presented international scientific courses on AERMOD); *see generally*

DE 1309-7 at Appendix A (listing, among other qualifications, extensive professional

experience at IBM Scientific Center, AeroVironment, and EnviroComp Consulting, Inc.).

Such experience is exactly the specialized knowledge that Federal Rule of Evidence 702

requires of expert witnesses. *See* Fed. R. Evid. 702(a) (allowing expert testimony where

"the expert's scientific, technical, or other specialized knowledge will help the trier of fact

to understand the evidence or to determine a fact in issue.").

3. Dr. Zannetti's critique of Mr. Auberle's model is based on sound scientific methodologies and analysis.

Dr. Zannetti's 105-page report describes his comprehensive analysis and critique of

Mr. Auberle's model. Dr. Zannetti evaluated multiple data sources and lines of evidence

to form his opinions, as described on page 104 of his report, that Mr. Auberle's "modeling

flaws individually and collectively result[] in an unreasonable and unreliable proposed

class area that inherently overstates the alleged impact from PM emissions due to the Deer

Park fire." DE 1309-7 at 104. Dr. Zannetti's analysis included:

- Recreating Mr. Auberle's model by re-running his computer codes;

- Evaluating multiple sources of air monitoring data at multiple locations from the time period modeled by Mr. Auberle;

- Reviewing photos and videos of the plume from the fire;

- Assessing Mr. Auberle's choice of a polar grid;

- Assessing Mr. Auberle's choice of stack parameters;

- Evaluating differences in hourly variation in emission rate;

- Assessing the use of $PM_{2.5}$ and PM_{10} compared to TSP;

- Comparing modeled estimates to air monitoring data from multiple stations;

- Running a sensitivity analysis on Mr. Auberle's choice of stack exit velocity;

- Running sensitivity analyses on the amount of the plume trapped aloft; and

- Running sensitivity analyses on stack diameter.

Dr. Zannetti's thorough evaluation of multiple lines of evidence is scientifically valid and

underscores the reliability of his opinions.

Throughout their motion, Plaintiffs contend that Dr. Zannetti failed to provide

citations for his conclusions and ignored data that was contrary to those conclusions. This

argument wholly ignores the analysis outlined above and the substance of Dr. Zannetti's

report, which details in painstaking fashion the evidence, data, and source materials utilized

in performing his assessment of Mr. Auberle's model. Dr. Zannetti's detailed, meticulous,

7

and scientifically valid methodologies stand in stark contrast to those employed by Mr. Auberle.

For example, Plaintiffs allege that Dr. Zannetti should have reviewed 3,000 Plaintiff Fact Sheets as relates to impacts of $PM_{2.5}$ at ground level. DE 1305-1 at 13. This ignores the fact that Dr. Zannetti *did consider* thousands of data points from air monitors around the fire to assess potential ground-level impacts. *See, e.g.*, DE 1309-7 at 12 (listing the number of CTEH measurements considered); *id.* at 13–27 (evaluating hourly monitoring data at multiple sites from March 1, 2019 to March 31, 2019). In contrast, neither Mr. Auberle nor Plaintiffs' toxicologist Dr. Dydek considered fact sheets or air monitoring data to support their opinions. *See generally* DE 1309-1; Dr. S. Thomas Dydek, *Expert Toxicology Report* (Apr. 1, 2022) (DE 1309-5).

Similarly, Plaintiffs contend that Dr. Zannetti dismissed conclusions of a health-related study. *See* DE 1305-1 at 11 (citing Gretchen T. Goldman et al., *Assessment of Air Pollution Impacts and Monitoring Data Limitations of a Spring 2019 Chemical Facility Fire*, Envtl. Justice (Sep. 13, 2021)) (DE 1305-8) ("Goldman Study"). That is simply counterfactual. Dr. Zannetti *did* consider and evaluate this report in formulating his opinions and explained his analysis of this report during his deposition. *See* DE 1309-7 at 20 ("I examined the paper of Goldman et al. (2021) related to the Deer Park Fire."); Ex. 1 at 165–81 (discussing the Goldman Study). Unlike Dr. Zannetti, Mr. Auberle did not review *any* studies in formulating his opinions, let alone the Goldman Study, and Mr. Auberle certainly did not take the conclusions into consideration in forming his opinions.

For example, the Goldman Study notes that:

8

> PM$_{2.5}$ levels recorded at TCEQ stationary monitors during the ITC fire did not reach levels of concern for health. A possible explanation is that particulate matter in the smoke plume stayed aloft initially, which aligns with research suggesting that fine particles from acute combustion events do not descend until the air cools and then can be dispersed.

DE 1305-8 at 11. This is consistent with the conclusion reached by Dr. Zannetti, yet Mr. Auberle does not so much as mention this study, nor do his opinions reflect the study's statement that PM may have remained aloft. In every instance, it is Dr. Zannetti who evaluated available data and integrated it into his analysis. This stands in stark contrast to the *ipse dixit* conclusions of Plaintiffs' expert, Mr. Auberle. *See generally* DE 1309.

B.   Plaintiffs misstate Dr. Zannetti's opinions.

Plaintiffs repeatedly mispresent Dr. Zannetti's opinions and his bases for forming them. Plaintiffs do not question the reliability of Dr. Zannetti's primary opinions, as discussed on pages 1 and 104 of his report, but instead focus on a small subset of Dr. Zannetti's cited lines of evidence, intentionally ignoring the totality of Dr. Zannetti's thorough work product and ultimate conclusions. Plaintiffs' cherry-picked critiques of Dr. Zannetti's evidence are baseless and provide no support for excluding his opinions.

1.   Plaintiffs misrepresent Dr. Zannetti's analysis of photos and videos of the fire.

Dr. Zannetti's consideration of photos and videos of the fire is one of many lines of evidence supporting his opinion that errors in Mr. Auberle's modeling "cause him to greatly overestimate concentrations and deposition of particulate matter emitted from the fire." DE 1309-7 at 1. Specifically, Dr. Zannetti opines that Mr. Auberle's results are in "strong disagreement with all available evidence related to the plume from the fire:

pictures, videos, aircraft observations and monitoring, and a large data set of ground-level

measurements of particulate matter during and after the fire." *Id.* Rather than focus on Dr.

Zannetti's multi-faceted analysis, Plaintiffs focus on one small part and argue that "Dr.

Zannetti's critiques stem largely from his review of photos and videos of the fires" and that

the photos and videos "form the basis of Dr. Zannetti's opinions."[3] DE 1305-1 at 7.

As explained in Dr. Zannetti's report, he reviewed several photos and videos

showing the actual plume, in real-time, that Mr. Auberle attempted to model. DE 1309-7

at 61–67. But his analysis did not stop there. Consideration of photos and videos is one

of the many lines of evidence Dr. Zannetti considered and that illustrate how Mr. Auberle's

arbitrary selection of inputs and failure to assess available information yielded model

results detached from reality. Based on Dr. Zannetti's assessment of the images, he could

see that, unlike Mr. Auberle's model, a large fraction of the plume did not stay near the

ground but remained trapped aloft. *See, e.g.*, *id.* at 66 ("Mr. Auberle's simulated plume is

entirely trapped near the ground and is inconsistent with the evidence of pictures, videos,

and USEPA aircraft observations of how the plume actually behaved."). It is more than

---

[3] Further, Plaintiffs state that it is Dr. Zannetti's opinion that "an air modeler or engineer should or must compare qualitative evidence such as videos or photos to a quantitative air model." DE 1305-1 at 7. Plaintiffs attempt to frame Dr. Zannetti's conclusion about Mr. Auberle's failure to evaluate available photos and videos as one of Dr. Zannetti's key opinions. Dr. Zannetti's review of photos and videos, however, reflects only one of the many analyses he undertook to support his opinions described on pages 1 and 104 of his report. And while Plaintiffs criticize this analysis as "qualitative," they ignore the many other lines of evidence that Dr. Zannetti considered and analyzed that were quantitative, such as his review of air monitoring data. Dr. Zannetti evaluated available data, both qualitative and quantitative, as part of his analysis of Mr. Auberle's model results; in contrast, Mr. Auberle undertook no such analysis and reviewed no such data.

reasonable to consider photos, videos, air monitoring data, and any other real-time information showing how the plume behaved in reality in an effort assess the reliability of the computer simulation of the same plume. *See* Fed. R. Evid. 702 (requiring expert testimony to be "based on sufficient facts or data" and "the product of reliable principles and methods").

Plaintiffs also overstate Dr. Zannetti's reliance on photos and videos. Dr. Zannetti dedicated but a handful of pages in his 105-page report to illustrating that Mr. Auberle failed to consider readily-available, real-world photos and showing how Mr. Auberle's simulated plume compared to those real-time observations. *See* DE 1309-7 at 61–67. Dr. Zannetti's report goes on to explain how many other quantitative lines of evidence— including EPA plume measurements, ground-level sampling data, and sensitivity analyses of Mr. Auberle's input data and assumptions—establish the unreliable and flawed nature of Mr. Auberle's model. Critically, all of the lines of evidence pointed in the same direction (*i.e.*, that Mr. Auberle's model predicted unrealistically high ground-level concentrations and deposition of PM and that, as a result, the proposed class area is unsupported), providing greater strength to Dr. Zannetti's conclusions. No single source or piece of evidence formed the entire basis of Dr. Zannetti's opinions.

Plaintiffs further mischaracterize Dr. Zannetti's testimony regarding his consideration of photos and videos, claiming that "when asked if he had any authority for his position that an engineer modeling an emissions event must compare photos and videos to a model, Dr. Zannetti testified no." DE 1305-1 at 7. In reality, Dr. Zannetti testified

11

that, based on his considerable experience in air modeling, modelers will compare their

models to actual data and observations:

> Modelers have done that for decades. I would say if you ask most modeler, they would say you have a scientific obligation after you run your model to compare with the measurement or with any evidence. It can be a picture. It cab [sic] be a video. It's – it's -- I would call it a scientific obligation. I -- I don't have a citation to give you, but my experience of 50 years in air pollution modeling is that any good modeler, if he has a chance of comparing the model output with the measurements, I mean, he will do it.

Ex. 1 at 208.

Plaintiffs appear to take the position that experts cannot rely on their experience in

forming their opinions and must cite to scientific authority or literature for every

proposition. Such a requirement is inconsistent with Federal Rule of Evidence 702, which

permits the qualification of an expert "by knowledge, skill, experience, training, or

education." *See also Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 156 (1999) ("[N]o one

denies that an expert might draw a conclusion from a set of observations based on extensive

and specialized experience.").

Furthermore, Plaintiffs place undue emphasis on the exact location and angle of the

photos and Dr. Zannetti's lack of contact with the photographers responsible for the photos.

See DE 1305-1 at 8. To begin, Dr. Zannetti *did* consider the angle of the photos, noting

that the pictures he included "were mostly perpendicular to the direction of the plume

because those are the most significant." Ex. 1 at 210. As Dr. Zannetti explained, his

consideration of the photos was to see how the plume traveled:

> A: . . . Certainly, pictures may have problems with the angle of view and with -- no, two-dimensional representation of a three-dimensional event is always questionable.

12

> But in this particular case, for the purpose of this study, the evidence
> is extremely clear. And that's exactly what we expect from a large
> fire. You will see this behavior in all the large fires that you can find
> in the literature, a plume that is moving up, up, up, daytime and
> nighttime, and most of it remain trapped aloft.

Id. at 209. And, in any event, Plaintiffs' hyper-focus on the angles of certain photographs

cited by Dr. Zannetti ignores the balance of his report and opinions, which are based on

numerous other pieces of evidence, data sets, and scientific analyses.[4]

Plaintiffs also argue that the photos do not align with Dr. Zannetti's testimony

regarding the visibility of $PM_{2.5}$. *See* DE 1305-1 at 8–9. However, Plaintiffs take Dr.

Zannetti's statements out of context. Dr. Zannetti testified that a single particle of $PM_{2.5}$ is

not visible to the eye and described a single particle of $PM_{2.5}$ as smaller than a human hair.

See Ex. 1 at 203–04 ("If I remember well, a human hair is about 60, 80 microns. So we're

talking about something that is 30 times smaller than a human hair."). Based on Dr.

Zannetti's statement that a single particle is not visible, Plaintiffs appear to extrapolate that

many particles of $PM_{2.5}$ in a plume would not be visible in photos or videos. Such an

extrapolation is flawed and counterfactual but, more importantly, it is not relevant to Dr.

---

[4] Additionally, Plaintiffs take issue with Dr. Zannetti's assessment of other photos not included in his report. DE 1305-1 at 8. Plaintiffs specifically refer to a photo used in a Houston Department of Health document and allege that Dr. Zannetti did not apply the same level of scrutiny to that photo as the photos he used in his report. *Id*. As Dr. Zannetti described above, he did scrutinize the photos to make sure he selected the ones that were "mostly perpendicular" to the plume, as those are the photos that allowed him to see how the plume traveled. Ex. 1 at 209–10. Additionally, unlike the photos considered by Dr. Zannetti, the Houston Department of Health document photo does not show the origin of the plume, which is critical to analyzing the photo. *Compare* Houston Health Department, *ITC Deer Park Fire: City of Houston actions, fixed site data analysis and recommendations* 44 (Apr. 25, 2019) (DE 1305-7) *with* DE 1309-7 at 61–65.

Zannetti's overall critique that Mr. Auberle failed to consider real-world data and observations showing that the actual plume behaved much differently than in Mr. Auberle's simulations.

In sum, Plaintiffs attempt to minimize Dr. Zannetti's thorough assessment of Mr. Auberle's model by emphasizing only one of the many lines of evidence that Dr. Zannetti considered. Dr. Zannetti's evaluation of photos and videos was plainly reasonable and reliable as one method to compare the plume's actual behavior to Mr. Auberle's model results. Indeed, it would be unreliable to ignore such available data as Mr. Auberle has done.

2.   Plaintiffs mischaracterize Dr. Zannetti's consideration of real-time monitoring data from the event.

Plaintiffs make several meritless arguments targeting Dr. Zannetti's consideration of real-world monitoring data. Plaintiffs first complain that Dr. Zannetti did not "cite to any authority that an engineer or other scientist should or must compare random and limited testing data to compare to air models." DE 1305-1 at 9. Contrary to Plaintiffs' claims, Dr. Zannetti appropriately referred to his experience with air modeling as the basis for stating that air measurements should be used to evaluate the performance of a model. Furthermore, the available data was neither random nor limited; rather, it was meticulously collected by various state and federal agencies and ITC contractors. *See* DE 1309-6 at 4–10 (discussing air quality monitoring performed by ITC contractors, TCEQ, EPA, and Harris County staff); DE 1309-7 at 12–27, 81–90 (assessing air monitoring data).

14

It is a basic tenet of reliability that the expert must evaluate sufficient facts and data to draw his or her conclusions. *See* Fed. R. Evid. 702(b) (requiring that expert testimony be "based on sufficient facts or data"). Plaintiffs' arguments are not grounded in the law, but are instead a thinly veiled attempt to salvage their own expert. Mr. Auberle eschewed any evaluation of data that could have shed light on the accuracy of his model. Faced with that basic failure, Plaintiffs are left only to argue that Dr. Zannetti must be excluded because he apparently evaluated too much data. Such an argument is nonsensical and clearly contrary to Federal Rule of Evidence 702.

Plaintiffs make two specific claims about Dr. Zannetti's thorough qualitative and quantitative evaluation of available evidence: (1) that Dr. Zannetti inappropriately relied on PurpleAir monitoring data, and (2) that certain health-related studies contend that the available monitoring data was inadequate to fully assess alleged health impacts. *See* DE 1305-1 at 11, 12–13. As discussed below, both arguments are without merit.

a) *PurpleAir Monitoring*

Plaintiffs argue that Dr. Zannetti inappropriately relied on PurpleAir monitoring data because PurpleAir monitors are not accepted for regulatory purposes. *See* DE 1305-1 at 11. It is undisputed that PurpleAir monitors are not used for regulatory purposes—Dr. Zannetti explains this explicitly in his report. *See* DE 1309-7 at 20. Fortunately, Dr. Zannetti does not use the data generated by these monitors for any such purpose. Rather, his critique is simply that Mr. Auberle failed entirely to consider this data (or any other data for that matter) in formulating his opinions and assessing the reliability of his model.

15

Moreover, PurpleAir data is just one of three types of air monitoring data that Dr. Zannetti considered in his report; Dr. Zannetti also considered TCEQ stationary monitoring data and CTEH data from the time period of the fire. *See id.* at 12–27, 81–96. And Dr. Zannetti recognized the limitations of the PurpleAir data—that the monitors from which it is generated are not professionally operated and not used for regulatory purposes—in his report. *See id.* at 20. As such, Dr. Zannetti does not propose that the PurpleAir monitors show the exact PM concentration at any given location during the fire. Dr. Zannetti only used the PurpleAir data for air quality trend data, noting that the PM measurements during the fire were similar, and sometimes lower, than those collected before and after the fire. *See id.* at 21–27. More to the point, and as explained above, Dr. Zannetti's primary critique of Mr. Auberle in this regard is that he failed to consider *at all* these monitoring data. This is not a situation in which two experts disagree on what a given set of data says. In this case, one expert—Plaintiffs' expert, Mr. Auberle—repeatedly and systematically ignored available data in formulating his opinions, rendering them wholly unreliable as explained in ITC's motion. *See* DE 1309.

b) *Health Studies*

Plaintiffs allege that there is a "consensus among scientists" that there was a lack of environmental measurements available during the fire and that Dr. Zannetti disregarded this information. DE 1305-1 at 12. Plaintiffs cite to only two reports as purported evidence of this "consensus," and then take those two reports out of context in an effort to make their point. The article by Dr. Goldman that Plaintiffs cite comments on the insufficiency of available monitoring data to assess *human exposure and health effects*. *See* DE 1305-8 at

16

11 ("[Insufficient monitoring data] limits researchers' ability to assess human exposure, health effects, and environmental justice implications of short-term acute air pollution events."). Likewise, the Houston Health Department PowerPoint presentation cited by Plaintiffs merely comments on the need for additional benzene monitors to better understand *human exposure*. *See* DE 1305-7 at 42. Assessing monitoring data for human exposure is a markedly different purpose than Dr. Zannetti's, which was to assess the performance of Mr. Auberle's model.

Furthermore, Dr. Zannetti did not baselessly disregard information. Dr. Zannetti evaluated the information presented in the reports and determined that the authors' conclusions did not affect his analysis. *See* Ex. 1 at 176, 213 (stating he evaluated the same monitoring data as the reports and did not see any $PM_{2.5}$ increase resulting from the fire at ground level). Based on his extensive experience with air modeling and considering the voluminous amount of air monitoring data available from multiple sources, Dr. Zannetti assessed the data and reasonably determined that it was more than sufficient for the specific purpose of evaluating Mr. Auberle's model. Millions of samples were collected around the Facility during and after the fire from multiple sources, including EPA and TCEQ. *See, e.g.*, DE 1309-7 at 12. Dr. Zannetti found that all of the data—from TCEQ, EPA, PurpleAir, and CTEH—pointed in the same direction: Mr. Auberle's model was not accurately predicting ambient concentrations and was unreliable. *See id.* at 104.

Plaintiffs do not raise specific concerns with Dr. Zannetti's consideration of TCEQ stationary monitoring data from several different locations, nor with the copious amount of CTEH monitoring data from around the Facility, but rather focus on the fact that no

17

studies articulate that the data is sufficient to assess Mr. Auberle's model. *See* DE 1305-1 at 13. Contrary to Plaintiffs' position, neither the Federal Rules of Evidence nor the case law require Dr. Zannetti to cite a paper or other authority that the readily-available data— ignored entirely by Plaintiffs' expert—is sufficient to assess the performance of an air pollution model. Dr. Zannetti's approach of evaluating the available data and reaching his own conclusions about that data is well within the bounds of what the Federal Rules of Evidence require for expert testimony. *See* Fed. R. Evid. 702 (requiring expert testimony to be "based on sufficient facts or data" and "the product of reliable principles and methods"). Mr. Auberle, by contrast, did not review or cite to *any* studies in his report nor did he consider *any* monitoring data.

C. Plaintiffs' motion ignores the scientifically valid bases for Dr. Zannetti's opinions.

Plaintiffs list several alleged "opinions and positions" for which they claim Dr. Zannetti did not "cite to authority." DE 1305-1 at 14. Plaintiffs repeatedly take issue with Dr. Zannetti's alleged failure to provide a source or scientific citation for his positions, yet they fail to acknowledge the significant analyses that Dr. Zannetti performed and discussed in his report. Dr. Zannetti provided reasoned explanations for his positions with citations to the data and evidence considered.

- Plaintiffs allege that Dr. Zannetti failed to "cite to authority" for his determination that Mr. Auberle's exit velocity of 1 meter per second was too low for the fire. DE 1305-1 at 14. Plaintiffs do not acknowledge that Dr. Zannetti

made this determination based on his review of the footage from the fire, which showed a rapidly rising plume. *See* DE 1309-7 at 97.

- Plaintiffs allege that Dr. Zannetti failed to "cite to authority" for why a polar receptor grid is inappropriate. DE 1305-1 at 14. Plaintiffs do not acknowledge that Dr. Zannetti analyzed Mr. Auberle's results using a polar receptor grid compared to those using a high-resolution rectangular grid and showed how the selection of the grid altered Mr. Auberle's results. *See* DE 1309-7 at 69–71. Nor do Plaintiffs acknowledge Dr. Zannetti's extensive experience and testimony that "most scientists don't use polar grid anymore" because modern computers can run a "good grid of 10-, 20-, 30,000 [modeling points] . . . with no problem." Ex. 1 at 221.

- Plaintiffs allege that Dr. Zannetti failed to "cite to authority" that it is mandatory that air modelers consider real-world measurements when available to evaluate their models. DE 1305-1 at 14. Plaintiffs do not acknowledge that Dr. Zannetti performed considerable analysis of real-world data to illustrate how doing so would have shown Mr. Auberle that his model deviated significantly from reality. *See* DE 1309-7 at 81–96. Moreover, Federal Rule of Evidence 702 is clear that an expert must base his opinions on sufficient facts and data. It is without question that an expert should evaluate available data that might shed light on the performance of a model—as opposed to ignoring such data, as Plaintiffs' expert Mr. Auberle has done.

19

The same is true for Dr. Zannetti's positions that AERMOD should not be used for fires and that using point sources in AERMOD to model a fire is unreliable. Plaintiffs' claim that Dr. Zannetti provided no authority for these positions ignores how Dr. Zannetti's *entire* report is an analysis of the multitude of issues that arise with modeling a fire using AERMOD and how and why Mr. Auberle's use of AERMOD is flawed.

D.   Plaintiffs do not provide sufficient grounds to exclude Dr. Zannetti's relevant and reliable opinions.

In essence, Plaintiffs have picked a few elements from Dr. Zannetti's report and taken them out of context and in isolation to argue that all of his opinions and testimony must be excluded. As discussed above, Plaintiffs' arguments are without merit. Moreover, they entirely ignore the balance of Dr. Zannetti's report, which fully supports his opinion that Mr. Auberle's methodologies are unreliable and that Mr. Auberle's report is factually unsupported. While there is no basis to exclude *any* of Dr. Zannetti's opinions, there is certainly no basis to exclude the balance of Dr. Zannetti's opinions which have not been addressed by Plaintiffs in their motion. As discussed above, Dr. Zannetti's opinions are based on multiple lines of evidence that all support his conclusions about the reliability of Mr. Auberle's model.

Notably, Plaintiffs do not comment on Dr. Zannetti's many sensitivity analyses demonstrating the effect of Mr. Auberle's modeling choices. As described in Dr. Zannetti's report, Mr. Auberle's deposition, and Defendants' motion to exclude Mr. Auberle, Mr. Auberle provided no support for his inputs and Dr. Zannetti demonstrated how Mr. Auberle's unsupported choices significantly affected his model's outputs. *See,*

20

e.g., DE 1309-7 at 69–78 (Dr. Zannetti assessing Mr. Auberle's inputs and assumptions);

Auberle Deposition (DE 1309-2) at 137, 140, 127 (Mr. Auberle stating that he did not

evaluate how his selection of various inputs would affect his model results); DE 1309 at

7–18 (Defendants discussing how Mr. Auberle's model is based on arbitrary, unsupported

inputs). Likewise, Plaintiffs do not address Dr. Zannetti's assessment of Mr. Auberle's

selection of stack configuration, stack height, or stack diameter. *See* DE 1309-7 at 71–72;

Ex. 1 at 250–51; *see also* Appendix to Defendants Intercontinental Terminals Company

LLC and NSK Corporation's Motion to Exclude Plaintiffs' Air Modeling Expert William

Auberle at Appendix C & Appendix D (DE 1309-13).

Dr. Zannetti's assessment of these model inputs is a fundamental basis for his

conclusion that "[t]he absence of scientific explanation and justification for [Mr.

Auberle's] assumptions seriously undermines the credibility of his opinions" and relatedly

that "each of these modeling flaws individually and collectively result[] in an unreasonable

and unreliable proposed class area that inherently overstates the alleged impact from PM

emissions due to the Deer Park fire." DE 1309-7 at 104. Dr. Zannetti's opinion that Mr.

Auberle's inputs are arbitrary is critical and Plaintiffs have provided no basis for its

exclusion.

Additionally, Plaintiffs do not raise specific concerns with Dr. Zannetti's

consideration of TCEQ stationary monitoring data or CTEH monitoring data from around

the Facility, instead focusing solely on his consideration of PurpleAir monitoring data. *See*

DE 1305-1 at 11. Nor do they even mention Dr. Zannetti's assessment of the amount of

plume trapped aloft in Mr. Auberle's model. Dr. Zannetti explains in his report that Mr.

21

Auberle unreasonably assumed that 100 percent of the plume remained near ground level, and, to support his conclusion, Dr. Zannetti provided an analysis of deposition using refined estimates of the plume near ground level. *See* DE 1309-7 at 99–102. Dr. Zannetti noted that this assessment was yet another example of Mr. Auberle's vast overstatement of the size of the proposed class area. *Id.* at 102.

Furthermore, Plaintiffs do not take issue with Dr. Zannetti's assessments of Mr. Auberle's use of a 1 g/m^2 threshold for deposition of $PM_{2.5}$. Dr. Zannetti concluded that "1 g/m^2 appears to be an unsupported value that is not tied to any particular environmental standard or level of impact, and in any event is not explained by Mr. Auberle." *Id.* at 76. Dr. Zannetti also determined that Mr. Auberle's use of TSP in his modeling of PM deposition was questionable and based on an "archaic regulatory measure." *Id.*   To demonstrate the issues with modeling TSP, Dr. Zannetti conducted model runs using both PM_{10} and $PM_{2.5}$ instead of TSP. *See id.* at 77–78. Both of the model runs showed PM_{10} and $PM_{2.5}$ concentrations well below Mr. Auberle's arbitrary threshold of 1 g/m^2. *See id.*

Dr. Zannetti's opinions are based on a thorough assessment of Mr. Auberle's model, real-world information, and decades of experience as an air modeler. As such, they are both reliable and relevant. *See Curtis*, 174 F.3d at 668 (citing *Daubert*, 509 U.S. at 592–93). While Plaintiffs have taken issue with certain lines of evidence that Dr. Zannetti considered in forming his opinions, those arguments are not sufficient to exclude the contested opinions, let alone the entirety of Dr. Zannetti's opinions. "[Q]uestions relating to the bases and sources of an expert's opinion affect the weight to be assigned that opinion rather than its admissibility." *Puga v. RCX Sols., Inc.*, 922 F.3d 285, 294 (5th Cir. 2019)

22

(citing *Rock v. Arkansas*, 483 U.S. 44, 61 (1987)). Furthermore, "the rejection of expert testimony is the exception rather than the rule." *Id.* (citing Fed. R. Evid. 702 Advisory Committee Notes). As such, Plaintiffs' arguments do not merit exclusion of Dr. Zannetti's opinions.

V.   CONCLUSION

For all of these reasons, Defendants respectfully request that the Court deny Plaintiffs' motion to exclude the opinions and testimony of Dr. Paolo Zannetti.

Dated: October 7, 2022   Respectfully submitted,

OF COUNSEL: BAKER BOTTS L.L.P.
Joshua B. Frank (admitted *pro hac vice*)
Michael S. Goldberg   By: */s/ Russell C. Lewis*
Texas Bar No. 08075800   Russell C. Lewis
Federal I.D. No. 01279   Attorney-in-Charge
Benjamin Gonsoulin   Texas Bar No. 24036968
Texas Bar No. 24099682   Federal I.D. No. 569523
Federal I.D. No. 2969896   One Shell Plaza
Kelly Hanen   910 Louisiana Street
Texas Bar No. 24101862   Houston, Texas 77002-4995
Federal I.D. No. 3038458   Telephone: (713) 229-1767
Elizabeth Furlow   Facsimile: (713) 229-2867
Texas Bar No. 24109899   russell.lewis@bakerbotts.com
Federal I.D. No. 3402815
BAKER BOTTS L.L.P.   ATTORNEYS FOR DEFENDANT
One Shell Plaza   INTERCONTINENTAL TERMINALS
910 Louisiana Street   COMPANY LLC
Houston, Texas 77002-4995
Telephone: (713) 229-1234
Facsimile: (713) 229-1522
joshua.frank@bakerbotts.com
michael.goldberg@bakerbotts.com
ben.gonsoulin@bakerbotts.com
kelly.hanen@bakerbotts.com
elizabeth.furlow@bakerbotts.com

Ivan M. Rodriguez
Texas Bar No. 24058977
Federal I.D. No. 4566982
Marc G. Matthews
Texas Bar No. 24055921
Federal I.D. No. 705809
PHELPS DUNBAR LLP
910 Louisiana, Suite 4300
Houston, Texas 77002
Telephone: (713) 626-1386
Telecopier: (713) 626-1388
ivan.rodriguez@phelps.com
marc.matthews@phelps.com

Dated: October 7, 2022

OF COUNSEL:
Aaron R. Crane
Texas Bar No. 24050459
Federal I.D. No. 619093
HOGAN LOVELLS US LLP
609 Main Street, Suite 4200
Houston, Texas 77002
Telephone: (713) 632-1400
Facsimile: (713) 632-1401
aaron.crane@hoganlovells.com

Respectfully submitted,

HOGAN LOVELLS US LLP

By: */s/ Bruce D. Oakley (by permission)*
      Bruce D. Oakley
      Attorney-in-Charge
      Texas Bar No. 15156900
      Federal I.D. No. 11824
      609 Main Street, Suite 4200
      Houston, Texas 77002
      Telephone: (713) 632-1400
      Facsimile: (713) 632-1401
      bruce.oakley@hoganlovells.com

ATTORNEYS FOR DEFENDANT
NSK CORPORATION

25

CERTIFICATE OF SERVICE

I hereby certify that on October 7, 2022, a copy of this document has been served on counsel of record for Plaintiff via electronic mail.

/s/ Russell C. Lewis
Russell C. Lewis